

A NEW SPECIES OF COPIDOSOMA CLOSELY RELATED TO
*C. NANELLAE SILVESTRI*¹

(Hymenoptera: Encyrtidae)

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Gahan (1930) reported *Copidosoma nanellae* Silvestri as present in North America, heavily parasitizing *Recurvaria thujaella* Kft. Later he recognized his error and asked Peck (1951, p. 483) to record this species as "*Copidosoma* n. sp. (*nanellae* Amer. authors, not Silvestri)."

This is a transcontinental species that occurs as far south as Connecticut in the east and California in the west. It has been reared from a number of microlepidopterous hosts but is now economically important because of its controlling effect on *R. canusella* Free., *R. milleri* Bsk., *R. starki* Free., and *Recurvaria* spp., which are destroying many acres of lodgepole pine in the Rocky Mountains.

Dr. B. D. Burks, Entomology Research Branch, U.S. Department of Agriculture, Washington, stated in correspondence that Mr. A. B. Gahan, now retired, reversed his original decision on the identity of this form after he examined female co-types of *C. nanellae* from Portici, Italy. Dr. Burks wrote, "The chief difference between the Palaearctic and North American forms is in the antennae of the female. In *nanellae* the club is almost or quite as long as the funicle (five-sixths as long in [the Washington] specimens, although the original description says the two are equally long). The North American form has the female antennal club two-thirds to four-fifths as long as the funicle. The two also differ in the color of the legs; the European form has the mid-tibia almost entirely yellow, while this is mostly black in the North American form."

The writer has recently found that the male genitalia of species of *Copidosoma* are distinct. Comparison of the male genitalia of the two entities supplemented the evidence compiled by Mr. Gahan and verified that the North American form is a new species.

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Copidosoma deceptor Miller, new species

Copidosoma nanellae Silvestri; Gahan, 1930, Proc. U.S.N.M. 77:7.

Copidosoma nanellae Silvestri; Britton, 1938, Bull. Connecticut State Geol. and Nat. Hist. Survey 60:141.

Copidosoma nanellae Silvestri; Procter, 1938, Biol. Survey of Mount Desert Region 6:425.

Copidosoma nanellae Silvestri; Doucette, 1941, J. Econ. Ent. 34:588.

Copidosoma sp.; Baird, 1942, Canad. Insect Pest Rev. 20:116.

Copidosoma nanellae Silvestri; Procter, 1946, Biol. Survey of Mount Desert Region 7:485.

Copidosoma nanellae Silvestri; Graham, 1947. In Control of forest insects in the Province of Ontario by introduction of insect parasites. (Canada Dept. Agr.) Div. Ent. processed report, pp. 75-77.

Copidosoma nanellae Silvestri; Craighead, 1950, U.S. Dept. Agr. Misc. Pub. 657:614.

Copidosoma sp. Baird, 1950, Canad. Insect Pest Rev. 28:234.

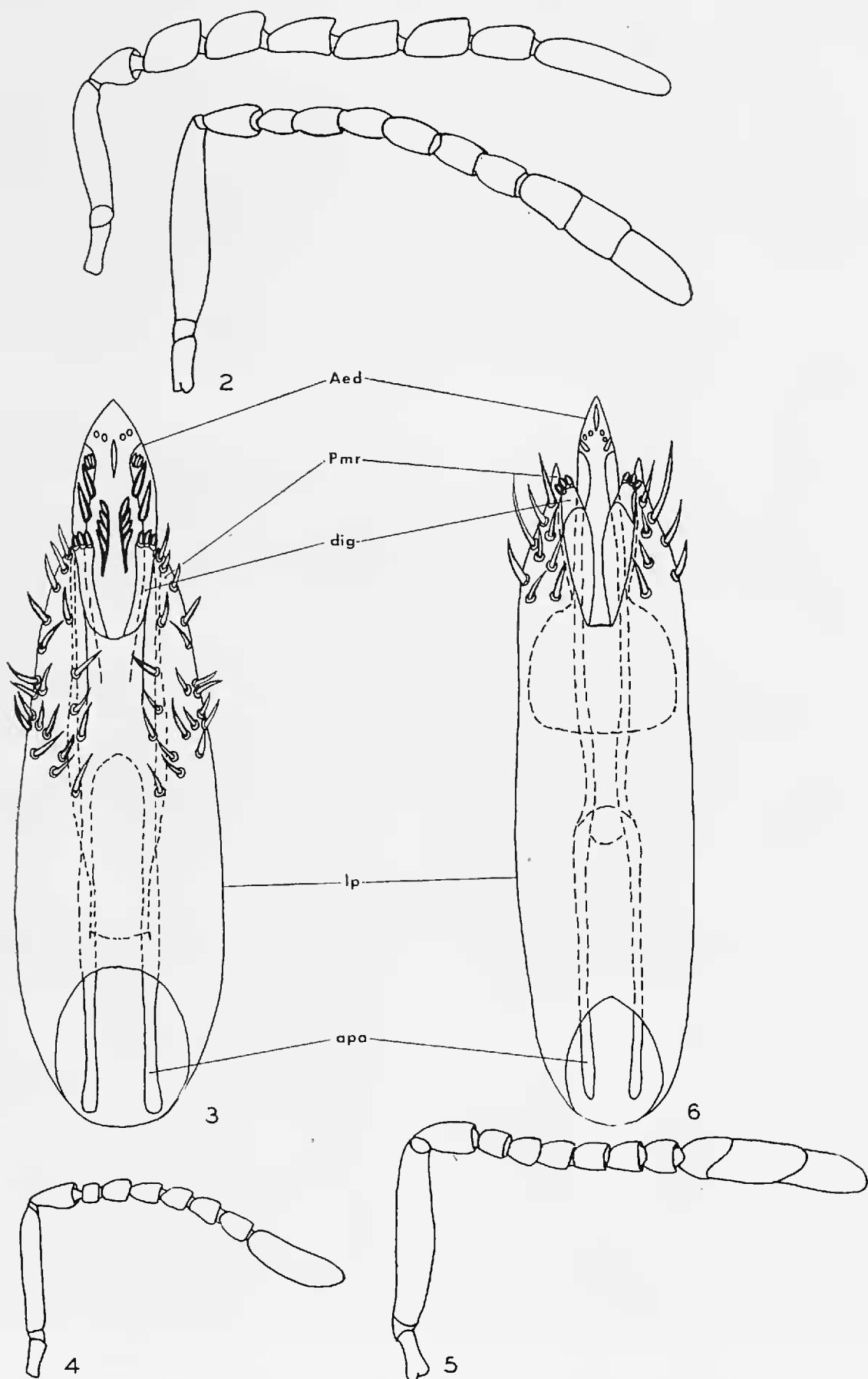
Copidosoma nanellae Amer. authors, not Silvestri; McLeod, 1951, Canad. Ent. 83:299.

Copidosoma nanellae Amer. authors, not Silvestri; Silver, 1957, Canad. Ent. 89:180.

Copidosoma n. sp. (*nanellae* Amer. authors, not Silvestri); Peck, 1951, U.S.D.A. Agr. Monogr. No. 2, p. 483.

Male: Head.—Black, subtriangular from anterior aspect, closely punctate; mandible brownish-yellow, tridentate; malar space half the longitudinal diameter of the compound eye; clypeus with 5-6 erect, black hairs; distance between lateral ocellus and compound eye equal to diameter of middle ocellus; distance between lateral ocelli greater than that between them and middle ocellus; compound eyes bare; scrobes smooth. *Antenna* (Fig. 1).—Black; scape as long as pedicel and first flagellar segment combined; pedicel equal in width to but shorter than the first flagellar segment; flagellum filiform; funicular segments equal in length and width; club twice as long as last funicular segment; flagellum strongly pubescent. *Thorax.*—Black, the scuteum and mesopleura with purplish reflections; scutum and scutellum subequal in length, and having obscure, widely scattered, black, suberect hairs; scutum closely punctate; scutellum coriaceous except for smooth, shiny distal portion; avilla coriaceous. *Wings.*—Stigmal vein longer than marginal; linear calva indistinct; marginal hairs short; costal cell of posterior wing short and narrow. *Legs.*—Black, the bases and apices of femora and tibiae white; tarsi whitish except for apical segments, which are blackish; spur of middle tibia a little shorter than metatarsus. *Abdomen.*—Black, subtriangular; strongly depressed, shorter than thorax; genitalia as in Fig. 3.

Female: Resembling the male except in the following characters: *Antenna* (Fig. 2)—Club-shaped; scape longer than pedicel and first three flagellar segments combined; pedicel wider than and almost twice as long as the first flagellar segment; funicle progressively wide apically; club triarticulate, $\frac{3}{4}$ as long as the funicle; flagellum with a minute obscure pubescence. *Abdomen.*—Ovipositor extending $\frac{1}{3}$ its length beyond apex of abdomen.



EXPLANATION OF FIGURES

Figs. 1-3, *Copidosoma deceptor* Miller. 1, Male antenna. 2, Female antenna. 3, Male genitalia; aed, aedeagus; pmr, parameres; dig, digitus; lp, basiparamere; apo, basal apodeme of aedeagus. Figs. 4-6, *Copidosoma nanellae* Silvestri. 4, Male antenna; 5, Female antenna; 6, Male genitalia.

Holotype: male, CASCADE VALLEY, 22 MILES NORTHEAST OF BANFF, ALBERTA. Reared from *Recurvaria* sp. on lodgepole pine. Genitalia and antenna on chalcid slide number 217, type number 2156, Canadian National Collection. *Allotype: female*, Mount Eisenhower, Banff National Park, Alberta, June 30, 1950. Reared from *Recurvaria* sp. on lodgepole pine. Genitalia and antenna on chalcid slide number 218, C.N.C.

Paratypes: 38 females, 49 males from Connecticut, New York, Maine, Nova Scotia, New Brunswick, Quebec, Ontario, Alberta, British Columbia, Idaho, Oregon, Colorado, and California in Canadian National Collection, U.S. National Museum, British Museum (Natural History), University of Naples Museum, Geneva Museum, and Dr. Vittorio Delucchi's private collection.

HOSTS: *Acleris variana* (Fern.), Nova Scotia; *Eucordylea huntella* Keif., Oregon; *Exoteleia dodecella* (Linn.), Connecticut; *Paralechia pinifoliella* Cham., New York; *Recurvaria apicitripunctella* Clem., Ontario; *R. canusella* Free., British Columbia; *R. milleri* Bsk., California; *R. moreonella* Heinr., Oregon; *R. piceaella* Kft., New York, Quebec; *R. starki* Free., Alberta; *R. thujaella* Kft., Maine, New Brunswick; *Recurvaria* sp. on *Rhododendron*, Oregon; *Recurvaria* spp. on *Pinus contorta* var. *latifolia* Engleman, British Columbia, Alberta.

COPIDOSOMA NANELLAE Silvestri

Copidosoma nanellae Silvestri, 1922, Boll. Lab. Zool. Agr. Portici 16: 295-301.

The female of *deceptor* is so similar to that of *nanellae* that for years the two were considered conspecific. The following is a description of the characters of *nanellae* that are significantly different from those of *deceptor*.

Male: Antenna (Fig. 4).—Black; scape as long as the pedicel and the first three flagellar segments combined; flagellum club-shaped; funicular segments progressively lengthened; pedicel wider and more than twice as long as the first flagellar segment; club three times as long as the apical funicular segment; flagellum with a minute obscure pubescence. *Fore Legs*.—Bases of femora black. *Middle Legs*.—Tibiae almost entirely yellow. *Abdomen*.—Genitalia as in Fig. 6.

Female: Antenna (Fig. 5).—Pedicel twice as long as the first flagellar segment; club 5/6 as long as funicle. *Fore Legs*.—Bases of femora black. *Middle Legs*.—Tibiae almost entirely yellow.

Lectotype male, AVELLINO, ITALY, June 10, 1919, *Recurvaria*. *Lectoallotype female*, same data as lectotype. *Co-types* 8 males,

1 female, same data as lectotype; all types in the University of Naples Museum, Portici, Italy.

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LITERATURE CITED

GAHAN, A. B.

1930. Synonymical and descriptive notes on parasitic Hymenoptera. Proc. U.S. Nat. Mus. 77:1-12.

PECK, O.

1951. Superfamily Chalcidoidea. In Hymenoptera of America north of Mexico. Synoptic catalog, by C. F. W. Muesbeck, K. V. Krombein, H. K. Townes, and others, pp. 410-594., U.S. Dept. Agr., Agr. Monogr. 2.

A NOTE ON SALMACIA FRONTOSA VARIETY ATRA (COCKERELL)

(Diptera: Larvaevoridae)

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The purpose of this note is to call attention to a name originally proposed in the genus *Gonia* which appears to have escaped the notice of several revisers (Tothill, 1924; Morrison, 1940; Brooks, 1944) of North American *Salmacia* Meigen, 1800 (= *Gonia* Meigen, 1803). Aldrich (1905, pp. 478-479) may have omitted the name from his catalogue in the belief that it was an unpublished Coquillett manuscript name, since a card from the Aldrich file with this name bears the notation "[Coq. MS]." Cockerell's name is a homonym, since the combination *Gonia atra* Meigen was first proposed in 1826. I can not at this time assign the name to any certain synonymy.

SALMACIA FRONTOSA var. ATRA (Cockerell)

1889. *Gonia frontosa* var. *ater* Cockerell, Tenth Rep. Colo. Biol. Assoc.:

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